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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/021,682	11/30/2001	Craig S. LaMoy	NC 79363A	9777

7590

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EXAMINER

LAWRENCE JR, FRANK M

ART UNIT

PAPER NUMBER

1724

DATE MAILED: 04/03/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/021,682

Applicant(s)

LAMOY ET AL.

Examiner

Frank M. Lawrence

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Priority

1. This application repeats a substantial portion of prior Application No. 09/504,396, filed February 15, 2000, *and adds and claims additional disclosure not presented in the prior application*. Since this application names an inventor or inventors named in the prior application, it may constitute a *continuation-in-part* of the prior application. Should applicant desire to obtain the benefit of the filing date of the prior application, attention is directed to 35 U.S.C. 120 and 37 CFR 1.78. Also, a reference to the prior co-pending application should be made in the first sentence of the specification, including the current status of the application.

Claim Objections

2. Claims 1 and 11 are objected to because of the following informalities: Claims 1 and 11 were not accurately reproduced when amended for this application. In line 1 of claims 1 and 11, "an air" should be inserted before "supply". In line 5 of claim 1, "output" should be substituted for "input". In line 4 of claim 11, "and an output," should be inserted after "said inlet". Appropriate correction is required.

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The specification does not provide antecedent basis for "free-standing" filters recited in claim 18 or the retaining arrangement recited in claim 20.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

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pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 18-20 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 18 recites "free-standing" filters, which is not adequately described in the specification. Claim 20 recites a retaining arrangement for the filters, which is also not described in the specification. Claim 19 is rejected as being dependent from claim 18.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3, 10, 11 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linnersten et al. (6,152,996; figures 1, 2; col. 1, lines 30-45; col. 2, lines 4-19; col. 3, lines 11-57; col. 4, lines 20-35; col. 5, lines 8-9, 32-44; col. 6, lines 19-47) in view of Thomaides et al. (4,838,903; figure 7; col. 1, lines 5-13; col. 6, lines 43-62).

8. Linnersten et al. ('996) discloses a filter ventilation system that can be used in existing compressed air systems that use a blower to supply a closed cabin, such as those used in military applications, comprising a concentric cylindrical air filter that includes an outer prefilter (15) for removing coarse particulates, a filter support screen (14) within the prefilter, a HEPA or ULPA filter (13) within the screen for removing up to 99.9999% of particulates at 0.12 micron, and a

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bed of carbon (12) within the HEPA or ULPA filter for adsorbing gases such as ammonia. Also disclosed is that the filter layers can be separately retained and removable for cleaning or replacement, and that the filters can be arranged for air flow in the opposite direction, entering the air cleaner along its axis and flowing radially outwardly through the layers with the particulate filter located inside of the sorbent filter. The instant claims differ from the disclosure of Linnersten et al. ('996) in that the arrangement of the filter layers are such that the prefilter is located within the second filter, that a pressure is provided from 0.5-1.5 in wg, and that a plenum and blower couples the downstream side of the filter with the protected zone.

Thomaides et al. ('903) discloses a filter for removing aerosols and small particulates from air comprising multiple concentric layers that can be oriented orderly in any way so that air can flow inwardly or outwardly. Also disclosed is a conduit for conducting the exit flow of multiple filters.

It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Linnersten et al. ('996) to include mounting of the filter in any suitable configuration governed by space constraints and the arrangement of the filter inlet and outlet and to use a plenum where multiple filters are used in parallel, such as in high-flow operations that could not be accommodated by a single filter assembly. The absolute pressure maintained within the enclosed space would have been obvious to one skilled in the art as determined by the desired efficiency of the system required, and it is submitted that a blower can be placed in any suitable place in the gas supply line for providing a pressure differential sufficient to ^{generate} great a positive flow into and out of the filter assembly.

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9. Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linnersten et al. ('996) in view of Thomaides et al. ('903) as applied to claims 1 and 11 above, and further in view of Berghout et al. (3,218,997; col. 3, lines 17-35).

10. Linnersten et al. ('996) in view of Thomaides et al. ('903) disclose all of the limitations of the claims except that a differential transducer is connected to the filter for showing an output proportional to the pressure sensed. Berghout et al. ('997) disclose an exhaust filter for gas in a radioactive material incinerator comprising pressure gages on either side of the filter for indicating the amount of pressure on the filter to show if it is plugged.

11. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Linnersten et al. ('996) in view of Thomaides et al. ('903) to include a filter differential transducer in order to show blockage of the filter so that it can be cleaned or replaced before efficiency is greatly reduced.

12. Claims 4, 5, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linnersten et al. ('996) in view of Thomaides et al. ('903) as applied to claims 1 and 11 above, and further in view of Repp et al. (4,962,371; abstract; col. 1, lines 8-27; col. 2, lines 59-67; col. 4, lines 9-15).

13. Linnersten et al. ('996) in view of Thomaides et al. ('903) disclose all of the limitations of the claims as discussed in paragraph 8 above except that the enclosed area is maintained at 0.5-1.5 in wg and uses a transducer to measure pressure in the area and produce an alarm signal when the pressure drops below about 0.5 in wg. Repp et al. ('371) disclose a system for maintaining a pressure of greater than 0.4 in wg in a shipboard protected zone by measuring with

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a transducer and producing an output voltage proportional to zone overpressure with signal lights for notification.

14. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Linnersten et al. ('996) in view of Thomaides et al. ('903) by including a transducer for maintaining a preferred pressure in the protected area with an indicator light in order to notify users of a drop in pressure so that maintenance repairs can be made before potentially harmful substances can intrude the area.

15. Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linnersten et al. ('996) in view of Thomaides et al. ('903) as applied to claims 1 and 11 above, and further in view of Frawley et al. (5,327,744; abstract; col. 1, lines 34-42; col. 8, lines 15-30).

16. Linnersten et al. ('996) in view of Thomaides et al. ('903) disclose all of the limitations of the claims as discussed in paragraph 8 above except that a pressure control valve is used to allow flow out of the enclosed area when pressure is greater than about 1.5 in wg. Frawley et al. ('744) discloses a filter system for maintaining a pressurized environment in military aircraft for protection against chemical, biological, or nuclear hazards, comprising a pressure control valve (52) for relieving excessive cockpit cooling airflow.

17. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the system of Linnersten et al. ('996) in view of Thomaides et al. ('903) by using a pressure control valve to relieve an over-pressure in order to protect an enclosed area from being pressurized beyond a comfort zone for inhabitants and to prevent damage to components from internal pressure. Absent a proper showing of criticality or unexpected results, the preferred maximum pressure is considered to be a parameter that would have been routinely

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optimized by one having ordinary skill in the art so that the enclosed area is protected from external contamination without excessive pressurization.

18. Claims 7-9, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Linnersten et al. ('996) in view of Thomaides et al. ('903) as applied to claims 1 and 11 above, and further in view of You et al. (5,890,367; abstract; col. 1, lines 34-49; col. 2, lines 15-28; col. 4, lines 13-39).

19. Linnersten et al. ('996) in view of Thomaides et al. ('903) disclose all of the limitations of the claims as discussed in paragraph 8 above except that a coarse prefilter and heater are located upstream of the 3-layer filter and that cooling coils are disposed downstream of the 3-layer filter.

20. You et al. ('367) disclose a filter system for a clean room comprising a series of air conditioners and filters located upstream and downstream of heaters and coolers and an air blowing fan for the treatment of outside air for use in the room. It would have been obvious to one having ordinary skill in the art at the time of the invention to heat or cool the air flow of a protected room in order to control humidity and temperature of the air for the comfort of people using the room. Absent a proper showing of criticality or unexpected results, the preferred temperature and humidity of the air are considered to be parameters which would have been routinely optimized by one having ordinary skill in the art based on the desired comfort temperature of the users.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The references to Sharp et al. (5,545,086), Sharp et al. (5,385,505), Knuth et al.

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(5,997,619), Craig (4,634,458), Skalia et al. (5,910,291) and Schmidt et al. (4,838,901) were cited in the parent application and are considered to be particularly relevant to the instant application. Copies of the references have been supplied with the prior application office actions.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank M. Lawrence whose telephone number is 703-305-0585. The examiner can normally be reached on Mon-Thurs 7:30-5:00; alternate Fridays 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Simmons can be reached on 703-308-1972. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

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March 27, 2002



David A. Simmons
Supervisory Patent Examiner
Technology Center 1700